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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/806,228

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EXAMINER

CUTLER, ALBERT H

ART UNIT

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2622

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/806,228	<b>Applicant(s)</b> NISHIOKA ET AL.	
	<b>Examiner</b> ALBERT H. CUTLER	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 49-72 is/are pending in the application.
- 4a) Of the above claim(s) 51-55, 57, 59-61 and 63-72 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 49, 50, 56, 58 and 62 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                      |                                                                   |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____                                                          | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This office action is responsive to communication filed on December 26, 2007.

#### ***Response to Arguments***

2. Applicant's arguments with respect to claims 49, 50, 56 and 58, filed December 26, 2007, have been fully considered but they are not persuasive.
3. With respect to claim 49, Applicant argues that Kikuchi '791 fails to suggest an imaging function free from influence due to a polarized direction of light.
4. The Examiner respectfully disagrees. Kikuchi teaches (figures 2a and 2b, column 8, lines 33-39) that the imaging function is free from influence due to a polarized direction of light. Basically the polarized direction of incident light has no influence over how the variable optical component works. The liquid crystal layer can change the polarization of the light by 90 degrees (figure 2A) or allow the light to pass as currently polarized (figure 2B). Kikuchi also teaches (column 4, lines 61-66, column 5, lines 30-37) of a portion of the lens component which is constant independently of the polarized direction of the rays used in the visual system.
5. Therefore, the rejection of claims 49, 50, 56 and 58 is maintained by the Examiner.
6. Applicant's arguments with respect to claim 62 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 49, 50, and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuyama et al.(US 5,825,408) in view of Kikuchi(US 5,052,791).

Consider claim 49, Yuyama et al. teach:

An optical apparatus(figures 5 and 6) having a telephone function(Figures 5 and 6 depict a portable television receiver which has a camera section(106, column 9, lines 54-64). Within the device, image data can be modulated into an audio signal and sent over a telephone line(column 10, lines 25-28), and also received via a receiving unit for a telephone(column 10, lines 47-55). Note that in alternate embodiments shown in figures 4 and 17, the telephone receiver can be connected to the portable television receiver, and data can be output directly over a telephone line.) comprising:

an optical system(column 9, lines 44-64) comprising an optical element("lens") having an optical characteristic(The lens is used to focus images to be taken by the camera section, and can be moved in order to zoom in and out, column 10, lines 33-37.);

an image pickup device for picking up an image formed by said optical system(CCD, column 4, lines 19-24. See also, column 9, lines 59-64 for the recording of images.);

a display(105) for displaying a picked up image(column 9, lines 61-64);

and a memory("recording section") for storing the picked up image(column 9, lines 59-61).

However, Yuyama et al. do not explicitly teach that the optical element has variable optical characteristics.

Kikuchi is similar to Yuyama et al. in that Kikuchi teaches of an optical system for a camera (figure 4), which optical system has an optical element (17) which allows a user to vary the magnification of an image (column 1, lines 8-12, column 8, line 22 through column 10, line 25).

However, in addition to the teachings of Yuyama et al., Kikuchi teaches that the optical element has a variable optical characteristic (See figures 2a and 2b, column 3, line 52 through column 4, line 3, column 8, lines 30-32, column 9, line 30 through column 10, line 6. The optical element (17) varies its optical characteristics depending on whether or not a voltage is applied in order to switch between wide and tele fields of view.). Kikuchi teaches (figures 2a and 2b, column 8, lines 33-39) that the imaging function is free from influence due to a polarized direction of light. Basically the polarized direction of incident light has no influence over how the variable optical component works. The liquid crystal layer can change the polarization of the light by 90 degrees (figure 2A) or allow the light to pass as currently polarized (figure 2B). Kikuchi also teaches (column 4, lines 61-66, column 5, lines 30-37) of a portion of the lens component which is constant independently of the polarized direction of the rays used in the visual system.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to replace the zoom lens system as taught by Yuyama et al. with the variable optical system containing the variable optical element taught by

Art Unit: 2622

Kikuchi for the benefit of eliminating the task of having to move a portion of the optical system in order to effect image magnification, and thus providing a system which is less complicated, requires less precision, and makes for cheaper manufacturing, easier assembly, and a smaller number of parts(Kikuchi, column 2, lines 15-26).

Consider claim 50, and as applied to claim 49 above, Yuyama et al. further teach a viewfinder(105) for determining an image pickup range(column 9, lines 61-64, column 5, lines 21-35).

Consider claim 58, and as applied to claim 49 above, Yuyama et al. further teach a microprocessor(CPU, 34, figure 3, column 6, lines 41-48).

8. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yuyama et al.(US 5,825,408) in view of Kikuchi(US 5,052,791) as applied to claim 49 above, and further in view of Ori(US 5,872,658).

Consider claim 56, and as applied to claim 49 above, Yuyama et al. teach of an optical apparatus having a telephone function(see claim 49 rationale). However, the combination of Yuyama et al. and Kikuchi does not explicitly teach of a diffractive optical element.

Ori is similar to Yuyama et al. in that Ori teaches of a zoom lens system for a camera(column 1, lines 5-8).

However, in addition to the teachings of Yuyama et al., Ori teaches that the zoom lens system comprises a diffractive optical element(See L1, figure 1, column 3, lines 28-33).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the optical apparatus taught by the combination of Yuyama et al. and Kikuchi comprise a diffractive optical element as taught by Ori for the benefit of correcting chromatic aberration(column 1, lines 19-25 and 60-62).

9. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yuyama et al.(US 5,825,408) in view of Kikuchi(US 5,052,791) and Levy(US 5,708,522).

Consider claim 62, Yuyama et al. teach:

An optical apparatus(figures 5 and 6) having a telephone function(Figures 5 and 6 depict a portable television receiver which has a camera section(106, column 9, lines 54-64). Within the device, image data can be modulated into an audio signal and sent over a telephone line(column 10, lines 25-28), and also received via a receiving unit for a telephone(column 10, lines 47-55). Note that in alternate embodiments shown in figures 4 and 17, the telephone receiver can be connected to the portable television receiver, and data can be output directly over a telephone line.) comprising:

an optical system(column 9, lines 44-64) having a focal point adjusting function(A lens(i.e. an optical element) is used to focus images to be taken by the camera section, and can be moved in order to zoom in and out, column 10, lines 33-37.);

an image pickup device for picking up an image formed by said optical system(CCD, column 4, lines 19-24. See also, column 9, lines 59-64 for the recording of images.);

a display(105) for displaying a picked up image(column 9, lines 61-64);

a memory("recording section") for storing the picked up image(column 9, lines 59-61); and

a microprocessor(CPU, 34, figure 3, column 6, lines 41-48).

However, Yuyama et al. do not explicitly teach that the optical element has variable optical characteristics.

Kikuchi is similar to Yuyama et al. in that Kikuchi teaches of an optical system for a camera(figure 4), which optical system has an optical element(17) which allows a user to vary the magnification of an image(column 1, lines 8-12, column 8, line 22 through column 10, line 25).

However, in addition to the teachings of Yuyama et al., Kikuchi teaches that the optical element comprises a vari-focal lens component having a variable optical characteristic(See figures 2a and 2b, column 3, line 52 through column 4, line 3, column 8, lines 30-32, column 9, line 30 through column 10, line 6. The optical element(17) varies its optical characteristics depending on whether or not a voltage is applied in order to switch between wide and tele fields of view.).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to replace the zoom lens system as taught by Yuyama et al. with the variable optical system containing the variable optical element taught by



Kikuchi for the benefit of eliminating the task of having to move a portion of the optical system in order to effect image magnification, and thus providing a system which is less complicated, requires less precision, and makes for cheaper manufacturing, easier assembly, and a smaller number of parts(Kikuchi, column 2, lines 15-26).

However, the combination of Yuyama et al. and Kikuchi does not explicitly teach that the optical element uses a polymer dispersive liquid crystal layer.

Levy is similar to Yuyama et al. and Kikuchi in that Levy teaches using a variable optical element(6, figure 2E) in a camera system(column 9, lines 1-42). As similar to Kikuchi, Levy teaches that the variable optical element can comprises twisted nematic liquid crystal(column 9, lines 9-12).

However, in addition to the teachings of Yuyama et al. and Kikuchi, Levy teaches that the variable optical element can comprise a polymer dispersive liquid crystal layer(column 9, lines 39-42).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have the variable optical element taught by the combination of Yuyama et al. and Kikuchi comprise a polymer dispersive liquid crystal layer as taught by Levy for the benefit of decreasing the amount of parts by eliminating the need for a polarizer(Levy, column 9, lines 39-42).

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

11. Siegner(US 4,782,348) teaches of using a polymer dispersive liquid crystal device in an imaging apparatus(column 3, lines 33-54, column 5, lines 8-36, column 5, line 56 through column 6, line 2).

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALBERT H. CUTLER whose telephone number is (571)270-1460. The examiner can normally be reached on Mon-Thu (9:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC

/Ngoc-Yen T. VU/  
Supervisory Patent Examiner, Art Unit 2622